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NOTES FROM MUSHROOM LITERATURE III.

W. A. Kellerman.

PANAEOLUS RETIRUGIS.—Some observations on the Rate of Growth of Panaeolus retirugis are published in the August number of Torreya, 1906. These were carried out in the palm-house of the Cornell University conservatory by Gertrude E. Douglas, in March of this year. We make the following extracts from her interesting account.

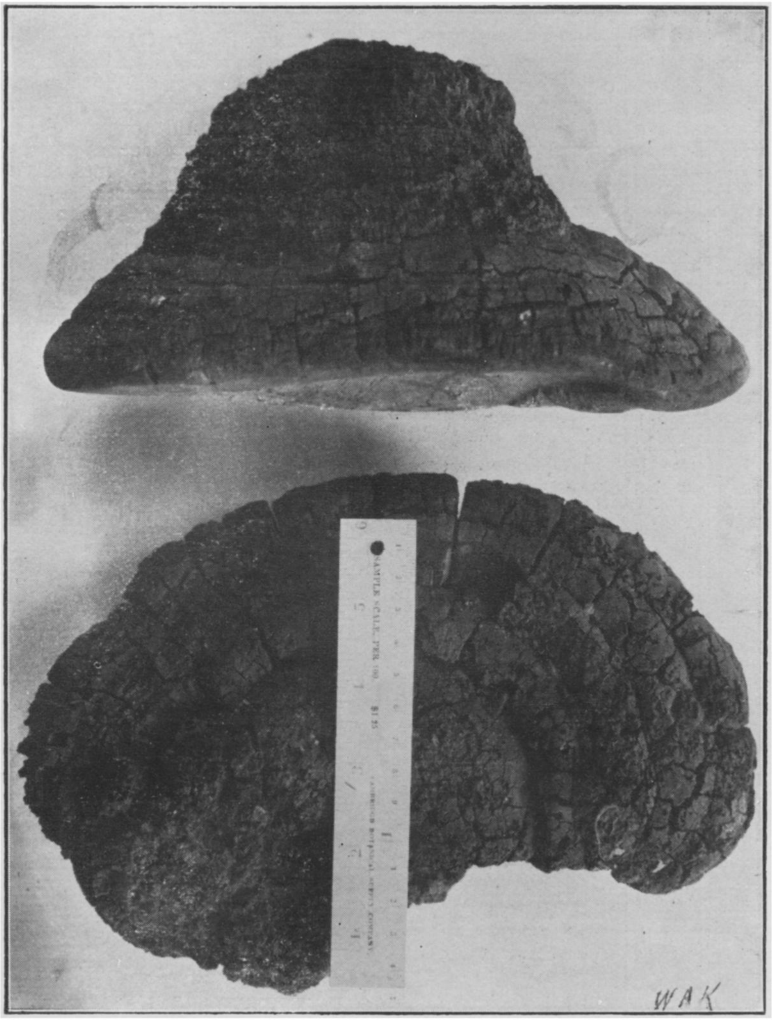

Fig. 201. PO-LY'-PO-RUS IG-NI-A'-RI-US. A very common woody Polypore that grows on Black Locust trees. In his revision of the species of the family Polyporaceae W. A. Murrill has given to this plant the new generic name of *Py'-ro-po-ly-po-rus.*

"As the rate of growth of mushrooms is a matter of some interest, individuals of this species were selected in as early stages as possible, and measured twice a day, until they had reached maturity. These measurements were taken in the morning and evening at the same time every day, the day interval between them being of eight hours and the night of sixteen. A large number of individuals were measured during the period from March 22 to April 4, but complete records were obtained from only eighteen, owing to the sensitiveness of the mushrooms. * * *

"As No. A was a very typical specimen, and as the most complete record was obtained of this, I shall describe its growth in some detail. The first measurements were taken in the morning. During the first 8-hour period by day. the plant did not change. However, during the following night, it began to grow slowly until it was 10 mm. high. On the following day, the stem entered on a period of very active growth, which lasted about fifty-six hours, until the plant was 145 mm. high. During this period of active growth, the rate at first increased, and then decreased slightly. The stem continued growing slowly for sixteen hours after this rapid growth interval.

The pileus began to grow slowly at the same time as the stem. It increased steadily, but slowly, for sixty-four hours, with width remaining slightly less than the length. During the last day of the most active stem growth, the width of the pileus made a rapid increase, from 8 to 20 mm. and continued broadening for 32 hours, after the stem had ceased to grow, until it reached 40 mm. At the same time the length continued increasing slowly till it reached 25 mm.

"The plant was growing six days and five nights, after its first appearance above the soil. The growth appeared to be no more rapid by night than by day. This was true also of the other specimens measured. In plant A the greatest growth which took place in any one period was during the third day. In the other plants it occurred sometimes by day and sometimes by night. * * *

"A few plants were marked to determine in what region of the stem the greatest growth took place. A section of the pileus was cut off in each case so that the whole stem, from the ground to the point where it joined the pileus, might be taken into account. The marks were placed 2 mm apart. The marked mushrooms were very sensitive to injury and for this reason I was not able to get records more than three times from each plant. The records show that the greatest increase in length took place near the top of the stem. It was usually not in the topmost interval, but in one or two down from the top, near the margin of the pileus. The plants grew for several intervals down the stem, but no growth took place in the lowest ones.

"These results in regard to the position of growth in the stem are similar to those obtained by J. Schmitz in 1841, from the Hymenomycetes. He divided the stem into thirds and found the greatest growth to take place in the topmost third, less growth in the middle third, and very slight or no growth in the bottom third. In some plants he divided his topmost interval into two parts and found that in many cases the topmost half grew less than the one beneath, although there were a great many variations from this."

New Cuban Mushrooms.—We find a brief account of scientific work heretofore done for the Island of Cuba, and two dozen new species described, and nearly all of them figured, in the First Annual Report of the Agricultural Experiment Station issued from Santiago de las Vagas, Cuba, by F. S. Earle. The report is in Spanish, as also is this account of "Algunos Hongos Cubanos," and the descriptions of the new species are published in the same idiom. The first scientific account of Cuban Fungi was contained in the work of Ramon de la Sagra on the "Historia Fisica, Politica y Natural de la Isla de Cuba"; the account of Fungi is by the botanist Montague, an enumeration and description of 113 species, the title being "Les Plantes Cellulaires de Cuba." But little work has been done since, but Dr. Earle's activity promises now to increase materially our knowledge of the fungal flora of that country. And doubtless there are many "Mushrooms" for here we have already many new species detected. Five of them belong to the genus *Pocillaria,* which is but another

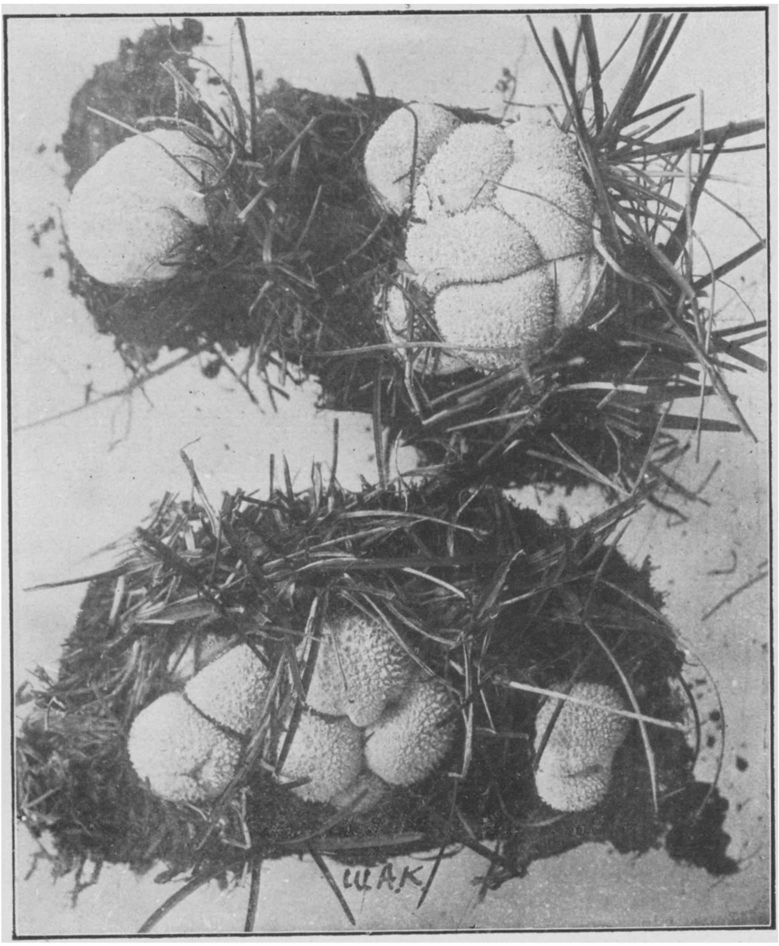

Fig. 202. LY-CO-PER′-DON WRIGHT′-I-I. A beautiful Puff-ball growing in the fields, easily recognized by the ornamentation. This consists of small spines about 2mm. long that presently flake off. Lloyd says: This little species is quite frequent in short grass, and takes kindly to yards, gardens and often to paths. It does not grow in Europe; it was originally described and named by the English botanist Berkeley to whom specimens were sent from this country.

name for Lentinus. To the genus *Phyllotus,* he ascribes two, to *Geopetalum* three, and to *Crepidotus* one species—all of these being the old genus *Pleurotus.* Other new species are *Galera,* three representatives; *Gymnochilus* (which is another name for *Hypholoma*), with five species; *Stropharia,* with two species; *Pholiotinia* (representing former Pholiota), with one species, and finally *Pholiota cubensis.*

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USES OF MUSHROOMS.

Geo. F. Atkinson, Cornell University.

The most prominent and at present important use of mushrooms from the standpoint of the utilitarian is as an article of food. We have now learned that their food value as a nutrient substance is not so great as has been fondly supposed, but, as Mr. Clark points out in Chapter XXII, in addition to the value they certainly do possess as food, they have very great value as condiments or food accessories, and "their value as such is beyond the computation of the chemist or physiologist. They are among the most appetizing of table delicacies, and add greatly to the palatability of many foods when cooked with them." Mushrooms undoubtedly possess a food value beyond that attributed to them by the chemist or physiologist, since it is not possible in laboratory analysis to duplicate the conditions which exist in the natural digestion and assimilation of foods.

Probably the larger number of persons, in America, at present interested in mushrooms, are chiefly concerned with them as an article of food, but a great many of these persons love to tramp to the fields and woods in quest of them just as the sportsman loves to hunt his game with dog and gun. It is quite likely that there will always be a large body of persons who will maintain a lively interest in the collection of *game* mushrooms for food. There are several reasons for this. The zest of the search, the pleasure of discovery, and the healthfulness of the outdoor recreation, lend an appetizing flavor to the fruits of the chase, not to be obtained by purchasing a few pounds of cultivated mushrooms on the market. It cultivates powers of observation, and arouses a sympathetic feeling toward nature, and with those outdoor environments of man which lend themselves so happily in bettering and brightening life, as well as in prolonging it.

Many others are discovering that the observation of form and habits of mushrooms is a very interesting occupation for those who have short periods of time at their disposal weekly. It requires but a little observation to convince one that there is an interesting variety of form among these plants, that their growth and expansion operate in conformity with certain laws which result in great variation in form and habit of the numerous kinds on the ground, on leaves, on branches, on tree trunks, etc.—*Mushrooms, Edible, Poisonous, etc.*